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| 10/659,213 | 09/10/2003 | Katsuhiko Miya | P/1250-261 | 5700 |
| 2352 | 7590 | 08/23/2006 | EXAMINER | |
| OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403 | | | HECKERT, JASON MARK | |
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1746

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,213

Applicant(s)

MIYA ET AL.

Examiner

Jason Heckert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ~~8/16/06~~ 12/1/03

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1-36 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what diameters are referred to in claim 1(d-2), 19(e), 28(e) as there is not sufficient description of the guide passages and guide parts. Please use more descriptive language thereby distinctly claiming the invention.

3. It is not clear what is meant by the phrase "internal space shape" in claim 3 and 12. Furthermore, Fig. 2 clearly depicts the recovery tanks as having a different shape than the storage tanks. Please define this vague term.

4. In regards to claim 6, 8-9, 15, 17-18, 24, 26-27, 33, 35-36 it is not clear what is meant by "discharge part". Earlier, a similar discharge pipe is mentioned as being in communication with said guide parts. Furthermore, the apparatus described appears to describe the backflow situation described as undesirable on page 15 lines 12-20 in the Specification. Please rewrite the claim clearly describing what is meant by "discharge part."

5. In claim 10(d-2) and 28(e) it is not clear what is exactly "covering" and what "is covered". This is partly due to the vague descriptions of the guide parts and the guide passages throughout the claims. Please provide claims that distinctly claim the invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claim 1-4 rejected under 35 U.S.C. 102(b) as being anticipated by Sumnitsch.

Sumnitsch discloses a substrate processing apparatus comprising a substrate holding part 10, a rotary part 7, a processing liquid supply 42 with conduits 44 and 45, a plurality of guide parts 36-38, a plurality of guide passages 39-41, a position adjusting part as indicated by 22, and the guide parts are stacked on top of one another, wherein the maximum internal diameter of the guide parts 36-38 is greater than the diameter of the passages 39-41.

8. In regards to claim 2, Sumnitsch discloses that the processing liquids in said apparatus can consist of a rinse agent such as water, and chemical agents such as acids.

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9. Sumnitsch discloses a plurality of storage parts, including recovery receptacles and storage tanks. Recyclable material is flung into the ducts 26-27 whereby it is stored briefly, serving the same function as the recovery tank in claim 3, until it makes its way through pipes 39-41 to storage tanks 46 and 47.

10. In regards to claim 4, Sumnitsch discloses a discharge pipe 48 that is connected to duct 27, whereby waste material is first recovered in said duct, and then discharged through the pipe.

11. Claim 19-20 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Ono et al. Ono et al. disclose a substrate treating apparatus that includes a substrate holding part 14, a rotary part 10, a process liquid supply part 26, a four stage splash guard 3 that can be raised and lowered, wherein guide parts and passages 15-18 for collecting effluent from the rotating substrate are formed in between each guard, and the maximum internal diameter of said second guide part is greater than the internal diameter of the second passage. Furthermore, he discloses that water and a variety of chemical fluids can be used to treat the substrate (page 9 lines 13-23).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 5-7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitsch, as applied to claims 1-4 above. Sumnitsch discloses storage tanks,

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however he does not disclose them as stackable. It has been held that rearrangement of parts is considered to be obvious. In re Japikse 86 USPQ 70 (CCPA 1950).

Furthermore, it has also been held that optimizing design to fit dimensional constraints is also obvious. In re Kuhle 188 USPQ 7 (CCPA 1975). It would have been obvious to modify Sumnitsch, and rearrange the storage tanks so as to meet dimensional constraints, where this can mean stack them, arrange them adjacently, or store them in separate areas of the apparatus. Sumnitch does disclose orifices 28-30 which can perform the function of a discharge port to the substrate holding part. Because Sumnitsch already discloses these discharge orifices, it would have been obvious to include them in addition to the stackable storage tanks.

14. In regards to claim 7, Sumnitsch discloses 3 processing liquid guide parts, but does not disclose whether the top must be "first" or if the bottom must be "first." As stated previously, it has been held that rearrangement of parts is considered to be obvious. In re Japikse 86 USPQ 70 (CCPA 1950). It makes no substantial difference whether the process of etching starts at the top and works down, or starts at the bottom and works up. Similarly, it does not make a difference if rinse water is discharge in the top position, or the bottom position, as functionally the steps are equivalent. It would have been obvious to locate the first processing liquid guide part lower than the others, as it is functionally equivalent to locating it higher than the others.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitsch in view of Matsuyama et al. Sumnitsch discloses all of the limitations of claim 10, as described in paragraph 7 above, but does not disclose the lowermost

chemical guide part covering above a liquid passage corresponding to the overlying guide part. Matsuyama et al. discloses a chemical guide part defined by 32 and 33 that covers the passage that also corresponds to guide part defined only by 32, which is overlying. It would have been obvious to modify Sumnitsch, to include guide parts that cover the passages corresponding to overlying guide parts, as disclosed by Matsuyama, in order to facilitate fluid flow in the limited space available.

16. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitsch in view of Matsuyama et al., as applied to claim 10 above. These limitations are the same as those described in claims 2-7, of which the explanations for their rejections can be found above. It would have been obvious to one skilled in the art to include such modifications in order to perform the desired functionality.

17. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al, as applied to claim 19 above, in view of Sumnitsch. Ono clearly expresses the use of movable splashguards. Sumnitsch discloses the use of recovery tanks, storage tanks, discharge pipes, discharge parts, and a hierarchy of guide parts. These limitations are the same as those described in claims 3-7, for which explanations of their rejections can be found above. It would have been obvious to modify Ono et al. to include the limitations of Sumnitsch in order to perform the desired functionality of recovering fluids during substrate processing.

18. Claim 28-29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. in view of Matsuyama et al. Ono et al. discloses all of the limitations of claim 28, as described in paragraph 11 above, but does not disclose the lowermost chemical

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guide part covering above a liquid passage corresponding to the overlying guide part. Matsuyama et al. discloses a chemical guide part defined by 32 and 33 that covers the passage that also corresponds to the guide part defined only by 32, which is overlying. It would have been obvious to modify Ono et al., to include guide parts that cover the passages corresponding to overlying guide parts, as disclosed by Matsuyama, in order to facilitate fluid flow in the limited space available. Furthermore, Ono et al. discloses that water and a variety of chemical fluids can be used to treat the substrate (page 9 lines 13-23).

19. Claims 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. in view of Matsuyama, as applied to claim 28 above, in further view of Sumnitsch. Sumnitsch discloses the use of recovery tanks, storage tanks, discharge pipes, discharge parts, and a hierarchy of guide parts. These limitations are the same as those described in claims 3-7, for which explanations of their rejections can be found above. It would have been obvious to modify Ono et al. to include the limitations of Sumnitsch in order to perform the desired functionality of recovering fluids during substrate processing.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6672318 B1 to Tsuchiya et al. Tsuchiya et al. disclose a substrate processing unit very similar features, such a substrate holder, guide parts, recovery parts, etc. to those in this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Heckert whose telephone number is (571) 272-2702. The examiner can normally be reached on Mon. to Friday, 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH



MICHAEL BARR
SUPERVISORY PATENT EXAMINER